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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,798	06/26/2001	Debarag N. Banerjee	US018086	1467

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EXAMINER

GESESSE, TILAHUN

ART UNIT	PAPER NUMBER
2684	

DATE MAILED: 06/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/891,798

Applicant(s)

BANERJEE, DEBARAG N.

Examiner

Tilahun B Gesesse

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2&4</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1-5,9-13,15-18,22-26,28-34 are rejected under 35 U.S.C. 102(a) as being anticipated by Jalali et al "Jalali" (6,154,659).

As to claim 1, Jalali discloses a power control system (100 of figure 1) including: a demodulator (101) for demodulating a first signal having a power value (incoming signal from BS (s)), the demodulated first signal including a noise component (column 6, lines 27-30) that is perpendicular to a signal axis of the first signal (figures 2 & 3) a first circuit (300) coupled to the demodulator (101) for receiving the demodulated first signal, the first circuit determining a noise variance of the demodulated first signal from the perpendicular noise component (step 230 of figure 2) a second circuit coupled to the demodulator and the first circuit, the second circuit providing an estimate of the power value of the first signal by eliminating the noise variance of the perpendicular noise component from the demodulated first signal (110 and 125) of figure 1); and an estimator coupled to the first circuit and the second circuit, the estimator calculating the

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ratio of the power value estimate and the noise variance (column 6, lines 27-46 and figure 1).

As to claim 2, Jalali discloses the estimator compares the ratio to a threshold value to provide one of a power up and power down signal to a base station (column 11, lines 55-60).

As to claims 3-5, Jalali discloses the first signal is a BPSK modulated signal and a PCB, a data bit (column 2, lines 19-30)

As to claim 9, Jalali discloses the first circuit samples a signal demodulated first signal to provide an instantaneous noise variance value (column 9, lines 19-29).

As to claim 10, Jalali discloses the first circuit samples a plurality of demodulated first signals to provide an average noise variance value (column 9, lines 19-29).

As to claim 11, Jalali discloses the plurality of demodulated first signals are PCBs within PCG (figure 1).

As to claim 12, Jalali discloses the second circuit provides an instantaneous estimate of the power value of the first signal.(figure 1)

As to claim 13, Jalali discloses the second circuit computes a power value for a plurality of first signals to provide an average power value estimate (figure 1).

As to claim 15, Jalali discloses all the limitation as explained in claim 1, and further more, Jalali discloses a comparator for comparing the ratio to a threshold value to provide one of a power up and power down signal to the base station.

As to claims 16-18, Jalali discloses the first signal is a BPSK modulated signal and a PCB, a data bit (column 2, lines 19-30)

As to claim 22, Jalali discloses the noise variance calculation circuit samples a signal demodulated first signal to provide an instantaneous noise variance value (column 9, lines 19-29)

As to claim 23, Jalali discloses the noise variance calculation circuit samples a plurality of demodulated first signals to provide an average noise variance value (column 9, lines 19-29).

As to claim 24, Jalali discloses the plurality of demodulated first signals are PCBs within PCG (figure 1 and it's disclosure).

As to claim 25, Jalali discloses the power estimation circuit provides an instantaneous estimate of the power value of the first signal (column 6, lines 17-37 and figure 1).

As to claim 26, Jalali discloses the power estimation circuit computes a power value for a plurality of first signals to provide an average power value estimate (column 6, lines 17-37 and figure 1).

As to claim 28, Jalali discloses a method of making control power decisions (power up or power down 120 of figure 1) including the steps of: demodulating a first signal from a base station (BSs incoming signal and demodulator 101 of figure 1) sampling a noise component of the demodulated first signal which is perpendicular to the fade line to determine the N_t associated with the demodulated first signal (column 9, lines 8-29 and figure 3), computing an estimated E_b/N_t , comparing the estimated N_b/n_t to a threshold value (column 10, lines 35-53) and provide one of a power up and power down signal to the base station depending upon whether E_b/N_t is greater than or less

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than the threshold value (estimating Es/No 300 and determining frame quality 125 and modifying Es/No 110 and comparing and generating power up and down command 120 of figure 1).

As to claims 29-30, Jalali discloses the first signal is a BPSK modulated signal and a PCB, a data bit ((column 2, lines 19-30).

As to claim 31, Jalali discloses the noise component of a single demodulated first signal is sampled to provide an instantaneous estimate of the variance of the sampled noise component (column 9, lines 19-29)

As to claim 32, Jalali discloses the device samples a plurality of demodulated first signals to provide an average of a plurality of estimates of the variance of the sampled noise component (column 9, lines 19-29)

As to claim 33, Jalali discloses the plurality of demodulated first signals are PCBs within PCG (figure 1 and it's disclosure).

As to claim 34, Jalali discloses the E_b is estimated for a plurality of first signals to provide an average estimate of E_b (column 5, lines 31-50).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 6-8 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jalali in view of Kim et al "Kim" (6,304,562).

As to claims 6-8 and 19-21, Jalali does not expressly teach the first signal is a PAM signal. However, Kim teaches the function of power control generates multilevel bits for example pulse amplitude modulation (PAM) may utilize to send the power control bits (column 7, lines 20-24 and figure 4). Since, both arts teaches in the same are of endeavor, therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Jalali and Kim in sending the power control bit in pulse amplitude modulation, as taught by Kim, sending power control bits in multilevel power control technique, in order to utilize the power control bit in plurality of modulating technique.

6. Claims 14 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jalali in view of Sawyer (5634,195).

As to claims 14 and 27, Jalali does not teach the circuit employs a histogram based approach to determine whether the average power value estimate is above or below a predetermined threshold. However, Sawyer teaches histogram power level

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(column 11, lines 37-49 and figure 9). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Jalali and Sawyer in showing the power level in histogram based representation, as taught by Sawyer, in order to show the minimum and maximum power level transmission.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nanda et al (6,571,104) discloses mobile station use 16 PCG Eb/No and compare target Eb/No (figure 4 and column 3, lines 6-28).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tilahun B Gesesse whose telephone number is 703-308-5873. The examiner can normally be reached on flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TBG

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TILAHUN GESE
PATENT EXAMIN

May 27, 2004